Write your name here

Surname	Other names

Pearson
Edexcel GCE

Centre Number | Candidate Number

Music Technology

Advanced
Unit 4: Analysing and Producing

Thursday 4 June 2015 – Morning
Time: 2 hours (plus 10 minutes setting up time)

Paper Reference
6MT04/01

You must have: CD ROM containing component files, blank CD for burning finished tasks, headphones or monitor speakers, computer workstation and music production software.
Supplementary page containing Figure 1 for question 4(b).

Total Marks

Setting up time

1. Open a new project in the music production software using 16 bit/44.1kHz sample rate.
2. Save the project as **unit4_your candidate number (e.g. *unit4_1234*)** in the folder designated by your centre.
3. Set the metronome to **109 bpm**.
4. Import "synthesiser.wav" from the CD ROM to a **stereo** audio track in the music production software, aligned with the beginning of bar 1.
5. Ensure that the synthesiser is audible and plays in time with the metronome. The synthesiser begins playing in bar 2.

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Write your answers to Section A in the spaces provided in this question paper.
- You must save your exported audio files for Questions 2 & 3 in Section A, and Question 5 in Section B to your project folder within the 2 hour examination time.
- You must ensure that the left and right earpieces of your headphones are worn correctly.
- Access to the internet or local network is **not** permitted.

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question*.
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed
  – *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression*.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

P44915A

©2015 Pearson Education Ltd.

1/1/1/1

P 4 4 9 1 5 A 0 1 1 2

PEARSON

SECTION A

Answer ALL questions. Write your answers in the spaces provided.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Listen to the synthesiser part that you have imported.

(a) Compare **bars 2–9** with **bars 32–39** of the synthesiser part. Identify three differences in the music and/or production.

(3)

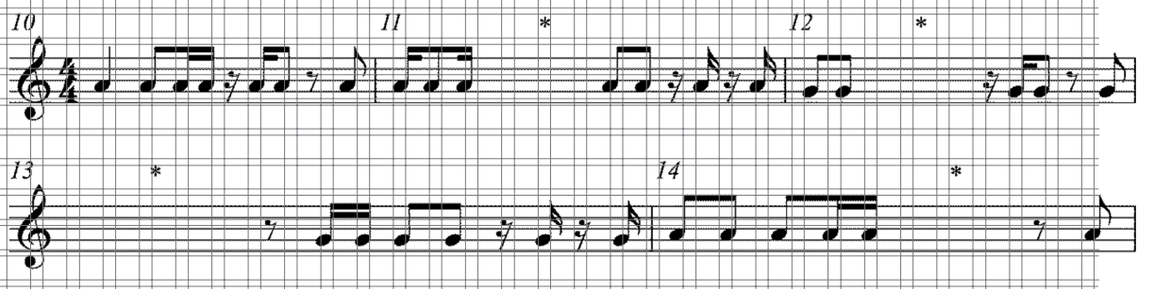
1 .....

2 .....

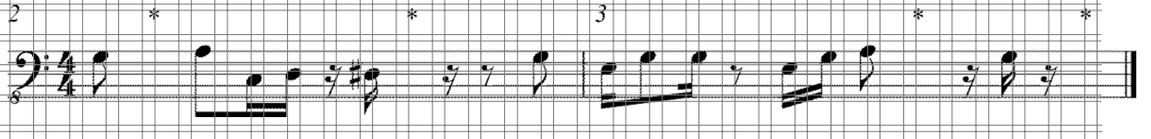
3 .....

(b) **Bars 10–14** of the synthesiser part are notated below. Fill in the rhythm of the **four** missing beats (each marked by an asterisk).

(4)



(c) Bars **2–3** of the synthesiser part are notated below. Fill in the **four** missing pitches (each marked by an asterisk).

(4)

(d) Identify the effect added to the synthesiser in **bars 22–31**. Describe the settings that would have been used.

(4)

.....

.....

.....

.....

(e) The graph below shows the filter on the synthesiser in **bars 2–9**.

(i) Identify the filter used.

(1)

- ☒ **A** Band pass filter
- ☒ **B** High pass filter
- ☒ **C** Low pass filter
- ☒ **D** Notch filter

(ii) How can you tell from the graph that resonance was increased?

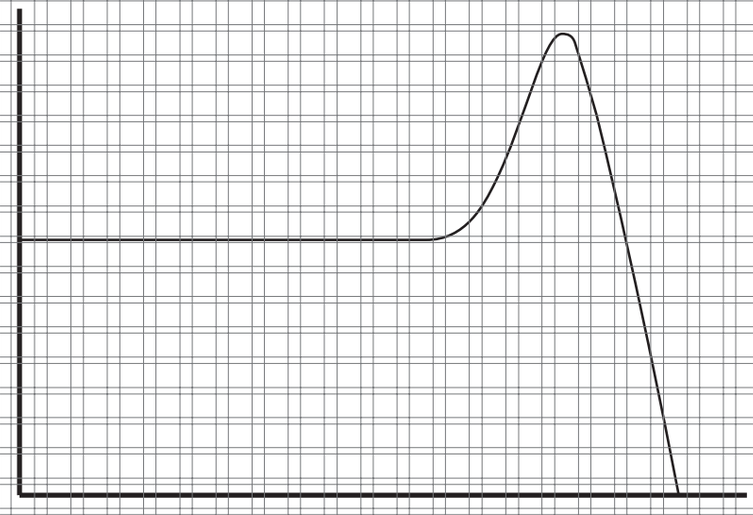
(1)

(iii) Label the two axes.

(2)

(iv) Draw a cross to indicate the cutoff frequency.

(1)

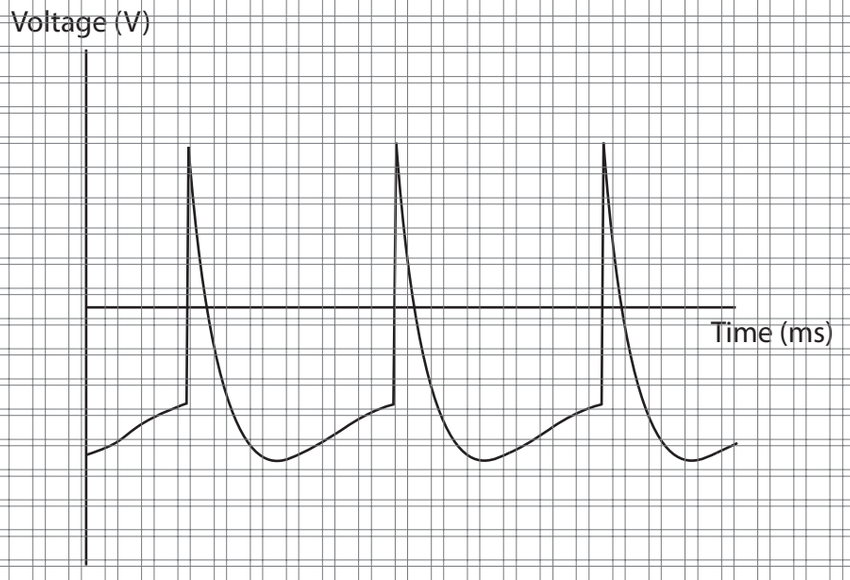


(f) The graph below shows the waveform of the synthesiser in the intro.

(i) What waveform was selected on the synthesiser?

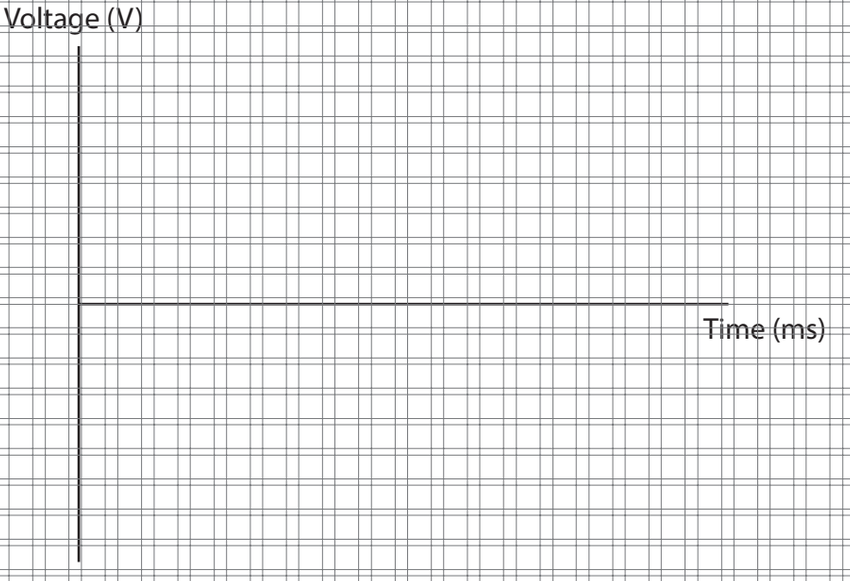
(1)

- ☒ **A** Saw
- ☒ **B** Sine
- ☒ **C** Square
- ☒ **D** White noise



(ii) Clipping distortion was added to the synthesiser. On the blank graph below, draw the clipped version of waveform shown above.

(1)



(Total for Question 1 = 22 marks)

2 Import the MIDI file "drums.mid" from the CD ROM to a new **MIDI/instrument** track in your music production software. Align the part so that the drums begin playing at the start of bar 2.

(a) (i) What is the highest note velocity in the drum part?

(1)

.....

(ii) What is the lowest note velocity in the drum part?

(1)

.....

(b) (i) The notes in the MIDI file have been assigned to the incorrect sounds. Using an acoustic drum kit, assign the notes to the sounds listed below to form a disco drum part. You should not change the rhythm.

- Kick drum
- Snare drum
- Closed hi-hat
- Open hi-hat
- Crash cymbal

(5)

(ii) Balance the drum track.

(2)

Solo the completed drum part. Turn off the metronome click and bypass any effects.

Bounce/export the completed drum part as a single 16 bit/44.1kHz stereo .wav file to the designated folder on your computer.

Name it 'task1_ your candidate number' (e.g. *task1_1234*).

(Total for Question 2 = 9 marks)

3 Import "bass guitar.wav" from the CD ROM to a new **mono** track in your music production software. This track is a complete bass guitar part. Ensure that the beginning of this audio track is aligned with the start of bar 1. The bass guitar begins in bar 2.

(a) Identify the **two** performance techniques used in **bars 2–9** of the bass guitar part.

(2)

1 .....

2 .....

(b) The bass guitar was recorded using DI. There is hiss on the recording. Excluding signal processing, identify **three** precautions that could be taken to reduce hiss whilst recording DI bass guitar.

(3)

1 .....

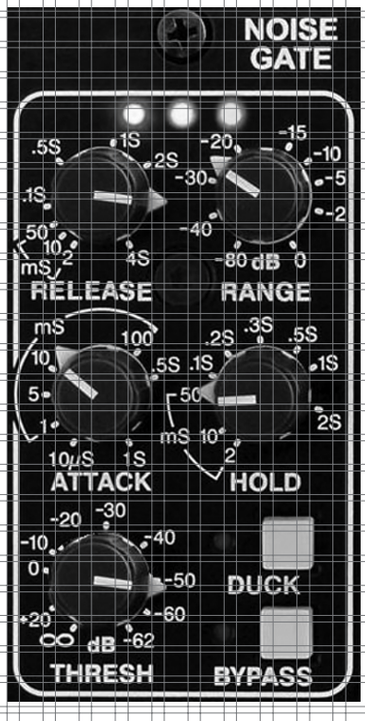
2 .....

3 .....

Import "vocals.wav" from the CD ROM to a new **stereo** track in your music production software. This track is a complete vocal part. Ensure that the beginning of this audio track is aligned with the start of bar 1. The singing begins at the start of bar 2.

(c) The settings below were used on the gate on the vocal recording. Why has the gate not completely removed the background noise?

(3)



(d) Between **bars 2–9**, the singer noticed that the some of the vocal had clipped. Remove the distortion whilst leaving the vocal melody unchanged.

(3)

(e) Remove headphone spill and other intrusive noise **throughout** the vocal track. You must leave the repeated vocal intact in **bars 18–19**.

(4)

Solo the completed vocal part. Turn off the metronome click and bypass any effects other than those used in questions 3(d) and 3(e).

Bounce/export the completed vocal part as a single 16 bit/44.1kHz stereo .wav file to the designated folder on your computer.

Name it 'task2_ your candidate number' (e.g. *task1_1234*).

(Total for Question 3 = 15 marks)

4 Answer **EITHER** Question 4(a) **OR** 4(b). You are advised to keep your answer to a maximum of 250 words. You may write in continuous prose, use bullet points, use a table and/or use diagrams to communicate your answer.

Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Chosen question number: **Question 4(a)** ☒ **Question 4(b)** ☒

EITHER

*(a) Describe how you would mic up a standard drum kit for a rock band in a contemporary recording. Explain any decisions you make. How would this have been done differently in the mid-1960s?

(16)

OR

*(b) Figure 1 shows a valve compressor. Many of the controls are similar to those of a software plug-in. Explain the function of the controls and specifications that can be seen in the picture.

(16)

Figure 1 is provided on a supplementary page.

(Total for Question 4 = 16 marks)

TOTAL FOR SECTION A = 62 MARKS

SECTION B

5 You should now have the following tracks imported on the computer: synthesiser, drums, bass guitar and vocals.

Follow the instructions below to produce a final stereo mix.

(a) Compress the **vocals**.
- Ensure that the quieter sections are not masked by other instruments.
- Ensure that the peaks do not jump out of the mix.

(3)

(b) EQ the **bass guitar**.
- Create a **bright** tone suitable for the 1980s style of playing.

(3)

(c) Listen to the effect on the vocal in **bars 18–19**.

(i) Recreate the same effect in **bars 20–21**.

(3)

(ii) Use the same panning as **bars 18–19** in **bars 20–21**.

(3)

(d) Balance the mix.
- Ensure that all of the tracks can be heard clearly.

(3)

(e) Produce a final stereo mix.
- Ensure that the mix output is at as high a level as possible.
- It should be free from distortion.
- **Do not** limit or compress the mix output.
- Ensure that the beginning and the end of the music are not cut off.
- Ensure that silences at the beginning and end do not exceed **one** second.

(3)

Turn off the metronome click.

Bounce/export the completed mix as a single 16 bit/44.1kHz stereo .wav file to the designated folder on your computer.

Name it 'task3_ your candidate number' (e.g. *task3_1234*).

(Total for Question 5 = 18 marks)

TOTAL FOR SECTION B = 18 MARKS
TOTAL FOR PAPER = 80 MARKS

BLANK PAGE

BLANK PAGE

Pearson Edexcel GCE

Music Technology

Advanced
Unit 4: Analysing and Producing

Thursday 4 June 2015 – Morning
Figure 1 for question 4(b)

Paper Reference
6MT04/01

Do not return Figure 1 with the question paper.

Turn over ▶

P44915A

©2015 Pearson Education Ltd.

1/1/1/1

P 4 4 9 1 5 A

PEARSON

TL Audio
IVORY 2
INPUT
INSTRUMENT
MIC
LINE
MIC 48V
INST
INPUT
LINE 0dB
16 dB 60
DRIVE
PEAK
90Hz
COMPRESSOR
ATTACK
SLOW
FAST
RELEASE
SLOW
FAST
HARD
SOFT
KNEE
THRESHOLD
0
+20 dB -20
RATIO
1:5
1:10
1:1.5
1:30
GAIN
MAKE-UP
5
12
0 dB 20
COMP
ON
GATE
-40
-20
OFF dB -10
SHUT
METER
O/P
O/P - 10
L/P
G/R
TL Audio
VU
OUTPUT
0
- ∞ dB + 15
STEREO
LINK
MONO VALVE
PROCESSOR
CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
ATTENTION
RISQUE DE CHOC ELECTRONIQUE
NE PAS OUVRIR
Manufactured by TL Audio Limited, England.
VALVE PROCESSOR
SERIAL NUMBER
FUSE T1AL 250V
230V~25VA
BALANCED
OUTPUT
UNBALANCED
S/CHAIN
LINK
UNBALANCED
INPUT
BALANCED INPUT
MIC INPUT
CE

Figure 1